FACTORS INFLUENCING CONSUMERS' BEHAVIOURAL INTENTION TO CHOOSE ORGANIC FOODS

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
ATT	Attitude
AVE	Average Variance Extracted
β	Beta
BI	Behavioural Intention
BSE	Bovine Spongiform Encephalopathy
DNA	Deoxyribonucleic Acid
DOA	Department of Agriculture
FiBL	The Research Institute of Organic Agriculture
GMO	Genetically Modified Organism
GoF	Goodness-of-fit
HBM	Health Belief Model
HV	Health Value
IFOAM	International Federation of Organic Agriculture Movements
MOH	Ministry of Health
NCD	Non-communicable diseases
OAM	Organic Alliance Malaysia
PBC	Perceived Behavioural Control
PIT	Perceived Importance of Taste
PLA	Place
PLS	Partial Least Square
PLS-SEM	Partial Least Square- Structural Equation Modeling
PRI	Price
PROD	Product
PROM	Promotion
PSI	Perceived Susceptibility to Illness
Q^2	Q Square
R^2	R Square
SN	Subjective Norms
SOM	Malaysian Organic Scheme (Skim Organik Malaysia)
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
USDA	United States Department of Agriculture
WHO	World Health Organization

ABSTRAK (MALAY)

Kajian ini menyelidik faktor-faktor yang mempengaruhi niat konsumer di Malaysia dalam memilih makanan organik. Model teoretikal dibina berasaskan ‘Teori Tingkahlaku Dirancang’ (Theory of Planned Behaviour), ‘Kepercayaan Kesihatan Model’ (Health Belief Model) dan ‘Teori Jangka-Nilai’ (Expectancy-Value Theory). Kajian ini menyelidik hubungan di antara enam pengubah bebas dalam model (sikap terhadap kelakuan, norma subjektif, persepsi kawalan kelakuan, persepsi kepentingan rasa, nilai kesihatan dan persepsi kemungkinan jatuh sakit) dengan pengubah tidak bebas (niat konsumer untuk memilih makanan organik) menggunakan data yang dikumpul daripada 380 responden dari Malaysia. Keputusan menunjukkan niat kuat dipengaruhi oleh norma subjektif diikuti dengan nilai kesihatan, persepsi kemungkinan jatuh sakit, dan akhirnya persepsi kawalan kelakuan. Adalah mengejutkan didapati bahawa sikap terhadap kelakuan dan persepsi kepentingan rasa tidak mempunyai impak yang signifikan terhadap niat. Kajian ini juga mendapati bahawa hanya produk dan harga daripada ‘Pemasaran Campuran’ (Marketing Mix (4Ps)) sebagai moderator dalam hubungan di antara persepsi kawalan kelakuan dan niat manakala tempat dan promosi tidak mempunyai kesan moderasi ke atas sebarang hubungan lain. Hasil daripada kajian ini akan membolehkan makanan organik pengeluar, pemproses, pemborong, peruncit, restoran, penyedia perkhidmatan dan juga petani organik, kerajaan Malaysia dan agensi berkaitan organik untuk lebih memahami keperluan dan permintaan pengguna produk makanan organik.

ABSTRACT

This research examined the factors that influence Malaysian consumers' behavioural intention towards choosing organic foods. The theoretical framework was developed based on Theory of Planned Behaviour (TPB), Health Belief Model (HBM) and Expectancy-Value Theory. The study examined the relationship between six independent variables in the model (attitude towards behaviour, subjective norms, perceived behavioural control, perceived importance of taste, health value and perceived susceptibility to illness) and the dependent variable (consumers' behavioural intention) using data collected from 380 respondents in Malaysia. The results show that intention was strongly predicted by subjective norms, followed by health value, perceived susceptibility to illness, and finally perceived behavioural control. It was startling to discover that attitude towards behaviour and perceived importance of taste did not have significant impact on intention. The study also found that only product and price from the Marketing Mix (4Ps) acted as moderators on the relationship between perceived behavioural control and intention whereas place and promotion do not have moderating effects on any of the other relationship. Findings from this study will enable organic foods producers, processors, wholesalers, retailers, restaurants, service providers as well as organic farmers, the Malaysian government and organic related agencies to better understand the needs and demands of organic food products consumers.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Organic foods refer to foods that are raised, grown, stored and/or processed that are free from conventional fertilizers or synthetically produced chemicals, pesticides, herbicides, fungicides, growth hormones or genetically modified components or organism (GMO) (Ngobo, 2011). In December 2000, The National Organic Standards Board of the U.S. Department of Agriculture (USDA) has established a national standard for the term "organic" (Ahmad and Juhdi, 2010). Organic foods, does not mean "natural" and that there is no legal definition as to what natural food is; thus, although natural food can include organic foods, but not all natural foods are organic. As defined by USDA (2015), organic foods must be produced without the use of most synthetic fertilizer and pesticides, sewer-sludge fertilizers, genetic engineering (biotechnology), antibiotics, growth hormones, and irradiation. International Federation of Organic Agriculture Movements (IFOAM) (2008) further extends the meaning of organic foods as protecting animal right and welfare (Elroy, 2008). According to Bord Bia Organic Research Study Report (2014), the phrase "free from chemicals and pesticides and therefore healthier" is the most commonly associated with organic. Terms such as "Healthy" and "Natural" are more likely to be linked with organic produce (Organic Alliance Malaysia, 2012).

Consumers demand for products of organic farming seemed to have grown internationally (Thompson, 2000). Similarly, demand for organic consumption in

Malaysia towards organic food products has also grown tremendously (Dardak, Abidin and Ali, 2009). Recent statistics show that market for organic food products is presently the second most important in South East Asian region with an approximately 20% of growth rate per year in organic consumption (Organic Monitor, 2015).

According to Global Analysis Report (2014) by Agriculture and Agri-Food Canada, Malaysia's gross domestic product (GDP) in 2013 registered a total of US dollar 316.2 billion. While the real GDP growth for Malaysia is estimated at 5.4% for 2014, higher than the previous year. According to Euromonitor (cited in Global Analysis Report (2014) by Agriculture and Agri-Food Canada), Malaysia is the 43rd-most populous country in the world, with approximately 29.7 million people in 2013. The population of Malaysia is expected to reached 31.3 million by 2017, and then to hit 32.4 million by 2020. The GDP is believed to increase in conjunction with the rise of population of Malaysia.

Malaysia marked the annual per capita consumer expenditure at US dollar 5,605 in 2013. The amount spent on food and non-alcoholic beverages was US dollar 1,160, or estimated 20.7% of the total, slightly lower than the Asia Pacific with an average of 22.7%. Besides that, a steadily year-to-year of 5% growth rate for the food service industry from 2009 to 2012 I being observed, and it is expected that this growth pattern will continue through 2014, hit US dollar 11.1 billion of total value share (cited in Global Analysis Report (2014) by Agriculture and Agri-Food Canada).

As the population of Malaysia becomes more concerned with diseases like obesity, diabetes, and hypertension, it is observed that consumers are opting for more wellness

and health products. It is expected that the sales in the health and wellness category will grow by a compound annual growth rate (CAGR) of 5.9% from 2012 to 2014 to reach US dollar 3.1 billion in total. Sales in organic food products in Malaysia are believed to increase in the near future as well (cited in Global Analysis Report (2014) by Agriculture and Agri-Food Canada).

1.2 Background of Study

1.2.1 Food Safety Issues

The public has become more and more concerned about food consumption recent years. Recent incidents and risks on food safety issues from particular food hazards in recent years have made it an important issue that raised public concern effectively (Miles and Frewer, 2001). High levels of concern have been showed by most consumers when it came to food safety issues regarding used of genetically modified organism (Miles, Ueland and Frewer, 2005), herbicide residues and pesticide, hormones and antibiotics in animals (Miles and Frewer 2001). This has led to more and more decline on consumer trust in the food supply's regulations after numerous food scares happened such as BSE (Bovine Spongiform Encephalopathy), Salmonella in eggs, and issues on the emergence of *Escherichia coli* O157:H7. These food scares occurred not only to influence and bring negative perception, affecting sales and consumption of that particular food, but they also affect the food supply, and more precisely the food industry widely (Miles and Frewer, 2001).

Institute for Responsible Technology (2014) explained that a GMO (genetically modified organism) is the extraction of the DNA of a species and forced artificially into

an unrelated plant or animal's gene through a laboratory process. From the explanation by World Health Organization (2015), genetically modified organisms can be defined as organisms (plants, animals or microorganisms) in which the genetic material (DNA) has been altered in a way that does not occur naturally by mating and/or natural recombination. This technology allows selected individual genes to be transferred from one organism into another, also between nonrelated species. Genetically modified is generally being applied with the expectation to improve the resistance of pesticides on crops, for the purpose of prolonging the shelf life of end products (Saher, 2006).

As per Ellahi (1996), agricultural biotechnology companies are focusing on modifying the genetics of plants and animals to produce organisms with highly desirable new properties, for example improve nutritional profiles and pest resistance. Other than these, they also are developing the microbial pesticides and herbicides in order to improve the yields of major crops. It is observed that agricultural plants as one of the most frequently cited examples of genetically modified organisms. It is believed that genetic engineering in agriculture will help reduce the use of pesticides, to reduce costs for food production, increase crop yields, greater food security, enhance nutrient composition and food quality, resistance to pests and disease (Phillips, 2008). Other than crops, there are some genetic engineering being applied to animals in order to increase yield and decrease susceptibility to disease. Some examples are salmons have been engineered to mature faster and to grow larger, cattle have been enhanced to prevent from mad cow disease (Phillips, 2008).

Cunha *et al*. (2010) commented that food products are fundamentally affiliated with variable of hazards, which are classified as technological, lifestyle, microbiological

and production. Since mid of 1980s, some food safety incidents have occurred such as BSE (Bovine Spongiform Encephalopathy) a disease that affects adult cattle which attacks brains and center nervous system of animals (known as Mad-Cow Disease); dioxin contaminations and avian influenza; which have led to the increase of public unease about the safety and health of modern methods of food production (The Irish Times, 2015).

Kim, Jang and Kim (2014) said that the application of GM technology could result in affecting animal welfare, degrading the natural ecosystem, transferring of genes to wild plants' DNA, and threat to crops' genetic diversity. Furthermore, GMO's crops and their associated herbicides are believed to be able to harm marine ecosystems, birds, amphibians, insects, and soil organisms. It will reduce bio – diversity and pollute the water resources (Lowell, 2015).

Are there any issues in term of food safety concern for human health when consuming GMO's foods? Miles and Frewer's (2001) study shows that consumers perceived genetic modification of food would actually interfere the nature, which might bring negative impact towards animal welfare and environment. They also perceive that genetic modification of food was out of consumers' control, the priority to get profit and the importance of consumers' right to choose comes before foods safety. According to World Health Organization (2015), the gene transfer from GMO's foods to cells of the body or to bacteria in the gastrointestinal tract would cause concern if the transferred genetic material adversely affects human health. The migration of genes from GMO's plants into conventional crops or related species in the wild (outcrossing) may have an indirect effect on food safety and food security.

According to American Nurses Association (2008), Humphreys and Armstrong stated that genetic materials which are inserted into soy plant may be able to transfer into the DNA of bacteria that are already living inside our bodies. Therefore, it is concluded that the GMO's foods are harmful to human health. They also oppose the application of GM's bovine growth hormone due to milk from cows which are already given this hormone contains more IGF – 1 (insulin – like growth factor 1), this could link human to cancer. The creation of GM's plants is worried as that could lead to new nutritional deficiencies, allergens, carcinogens, and toxins that we are unprepared to confront.

1.2.2 Common health problems and unhealthy lifestyles of Malaysians

In Malaysia, the tendency for people to be highly dedicated to own job and live very hectic lifestyles have led to increased frequency for them to take outside meals, grabbing quick meals from fast food restaurants, coffee shops, hawker stalls, and cafes or even meals just being skipped. They claimed that they never have time for exercise and this has led them to overweight. Those are the characteristics of many typical working adults in Malaysia that often put more focus on careers to get wealth rather than health, thus lack of time for other things (Sharwaki, Mohamed and Rezai, 2014). In short, reasons are categorized as food preparation; lack of time; resistance to change; self-control; unpleasant foods; cost of food; lack of professionals or knowledgeable consensus; selection influences; and influence of other people (Sharwaki, Mohamed and Rezai, 2014). The lack of concern for their health is extremely worrying as the incidences of non-communicable diseases (NCDs) is increasing. Sagayam (2012) reported in The Malay Mail that from the figures released by the Health Ministry (2012) (which are supported by Sharwaki, Mohamed and Rezai (2014) and National Health and Morbidity

Survey (NHMS2011)), more than 17 million Malaysians, or equivalent to 60.7 percent of the population, suffer from non-communicable diseases suspected due to stressful lifestyle, unhealthy food intake, tobacco and alcohol consumption, with many still undiagnosed.

Non-communicable diseases (NCDs) are diet-related chronic diseases which include heart disease, diabetes, obesity, hypertension, cardio-vascular diseases and cancer are among the main one (Sharwaki, Mohamed and Rezai, 2014). According to The Star Online (2013), Dr. Tee E Siong, president of Nutrition Society of Malaysia and chairman of Nutrition Month Malaysia Steering Committee quoted in an article published as courtesy of Nutrition Month Malaysia 2013, diet-related chronic diseases are prevailing among Malaysian adults, regardless of age, gender, or race in Malaysia. Reported by The Malay Mail (2012), World Health Organization Western Pacific regional director Dr. Shin Young-Soo said over 35 million people die from non-communicable diseases (NCD) globally (Sagayam, 2012). According to the World Health Organization (WHO) (2015), latest result shows NCDs kills 38 million people each year. The figure is surprisingly increasing from year to year. Therefore, efforts must be done to cure this matter.

The Ministry of Health Malaysia and various NGOs such as Nutrition Society of Malaysia, Malaysian Dietitians Association, Malaysian Health Informatics Association, National Stroke Association of Malaysia, Malaysian Association for the Study on Obesity, and The Heart Foundation of Malaysia realized these rapidly mushrooming health issues and thus efforts should have been distinguished.

Malaysia's then Health Minister Datuk Seri Liow Tiong Lai mentioned the figures announced by the ministry estimated 2.6 million diabetes sufferers, 5.8 million Malaysians with hypertension, 6.2 million with high cholesterol and 2.5 million with obesity. However, there could be more sufferers from NCD as there are many Malaysians who have yet to get a medical check-up. The rise in NCDs and its risk factors has been proven by National Health and Morbidity Survey (NHMS) 2011 (Tee, 2013).

1.2.3 Efforts to curb health problems among Malaysians

The unhealthy eating behaviour has prompted prevention steps taken by the Ministry of Health in order to promote a healthier eating lifestyles and habits (Sharwaki, Mohamed and Rezai, 2014). This includes the circular on "Guidelines on the Implementation of Healthy Eating in the Public Sector", "Healthy Lifestyle Campaign" and "Reduce Sugar Intake Campaign" in conjunction with the National Plan of Action for Nutrition of Malaysia, NPANM II (2006-2015) (Sharwaki, Mohamed and Rezai, 2014) as a way to educate the public and create health awareness on the content of daily calories and sugar intake through the labeling of food served. The Ministry of Health Malaysia aimed to reduce the death caused by NCD by 25 percent by 2025, emphasized by the former Health Minister, Datuk Seri Liow Tiong Lai.

There is a vital need to take prevention action to embrace a lifestyle of better health and wellness, whereby the public must realize that one must try to make some changes to create health, although it is extremely not easy and not simple. Hippocrates's famous quote - "Let food be thy medicine and medicine be thy food" is actually an advice

on making the food we consume as our medicine and our medicine as our food (Gorski, 2015). In short, by changing the food we eat, we can change our health.

Rodale (2014) describes the use of food as medicine in some hospitals in Pennsylvania that are using organic produce to help heal their patients. The launch of a true farm-to-hospital food program in partnership of St. Luke's University Health Network and Rodale Institute for instance, resulted in a transforming the land to organic and farm vegetables so that the hospital is provided with fresh, local organic produce, in line with the hospital's belief that organic produce used in patient meals and in the cafeteria will help in their health. Lynn Trizna as a farmer for example grows five acres of vegetables in 2014 and provides her produce to all six hospitals within the Network around St. Luke's, and she plans to expand her farm to 10 acres in 2015. The potential of expansion made Rodale Institute and St. Luke's to grow the program further by having 15 to 20 farmers to support the production of organic produce to provide to hospitals.

Scientific Findings About Organic Agriculture (2014) by Iowa State University showed that consuming organically grown food and grass-fed whole foods bring benefits to the health of our bodies and prevent the possibilities to get diseases as organic foods were found to contain higher levels of nutrients which are important for our health (Rodale, 2014). There are three times more nutritious, minerals and traces of elements in organic produce than conventional produce (Scientific Findings About Organic Agriculture, 2014).

1.2.4 Dietary changes for better health among Malaysians

Nutrition Month Malaysia 2013 is an annual community nutrition education program organized by Nutrition Society Malaysia, Malaysian Dietitians' Association and Malaysian Association for the Study of Obesity to create public's awareness on learning more about interesting nutrition information (Tee, 2013). Participants in the Nutrition Month Malaysia "Eat Right, Be Active: Stay Free From Diet Related Disease" Family Carnival which was held during 3-4 May, 2013 at the Mid Valley Exhibition Center were provided with free nutrition screenings, expert advice from nutritionist and dietitians etc.

According to the Malaysian Food Pyramid that is adapted from the Nutrition Society of Malaysia (updated 2013) which is shown in Figure 1.1, the serving of different category of food is stated clearly to guide people in having a healthy and balanced diet. Eat right is one of the seven steps to a healthier lifestyle – reason being, with healthy eating on getting the necessary "BMV" in the meals, it primarily means going for Balanced meals, in Moderate amounts, and with a Variety of foods according to the Malaysian Food Pyramid (Tee, 2013).

Figure 1.1 Malaysian Food Pyramid (2013)

The Ministry of Health Malaysia, with the auspices of National Coordinating Committee of Food and Nutrition (NCCFN) had compiled The Malaysian Dietary Guidelines (2010) with the latest science-based nutrition and physical activity recommendations as the Nutritional Guidelines is aimed to provide advice on the ways in promoting healthy eating and make active lifestyle a practice. It is also aimed to combat the mounting problem of obesity in Malaysia. This is an updated version from the first published 1999 version. As such, there are 14 key messages in this guidelines compared to only 8 key messages in the previous guidelines. There are also 55 key recommendations included under the 14 key messages.

Table 1.1
The 14 key messages of Malaysian Dietary Guidelines (2010)

1	Eat a variety of foods, but they must be within your recommended daily food intake.
2	Maintain your body weight within a healthy range.
3	Be active physically every day.
4	You should eat an adequate amount of rice, cereal products (whole grain is preferred) and tubers.
5	Eat plenty of fruits and vegetables every day.
6	Eat moderate amounts of meat, fish, poultry (chicken, duck), eggs, legumes and nuts.
7	Drink or eat adequate amounts of milk and milk products.
8	Limit foods that are high in fats (like butter and fried foods). Try not to use so much oils or fats in preparing your food.
9	Don't use too much salt and sauces in preparing foods.
10	Eat and drink foods and beverages that are low in sugar.
11	Drink plenty of water every day.
12	When you have a baby, breastfeed the baby exclusively on breast milk from the day he/she is born to the age of six months. Thereafter, continue breastfeeding while introducing other foods until your child is two years of age.
13	Eat and drink safe foods and beverages.
14	Make effective use of nutrition information on food labels. (Always look for kCal per serving/100g etc and find out what went into making that particular food.)

In 2011, American Food Plate has replaced the old food pyramid. According to ChooseMyPlate.gov by United States Department of Agriculture (USDA), it is a new way to measure the portion of food that we consume, consists of five categories which are fruits, vegetables, grains, protein, and dairy. However, this ChooseMyPlate guide for healthy diet is still uncommon for Malaysians if compared to Malaysian Food Pyramid.

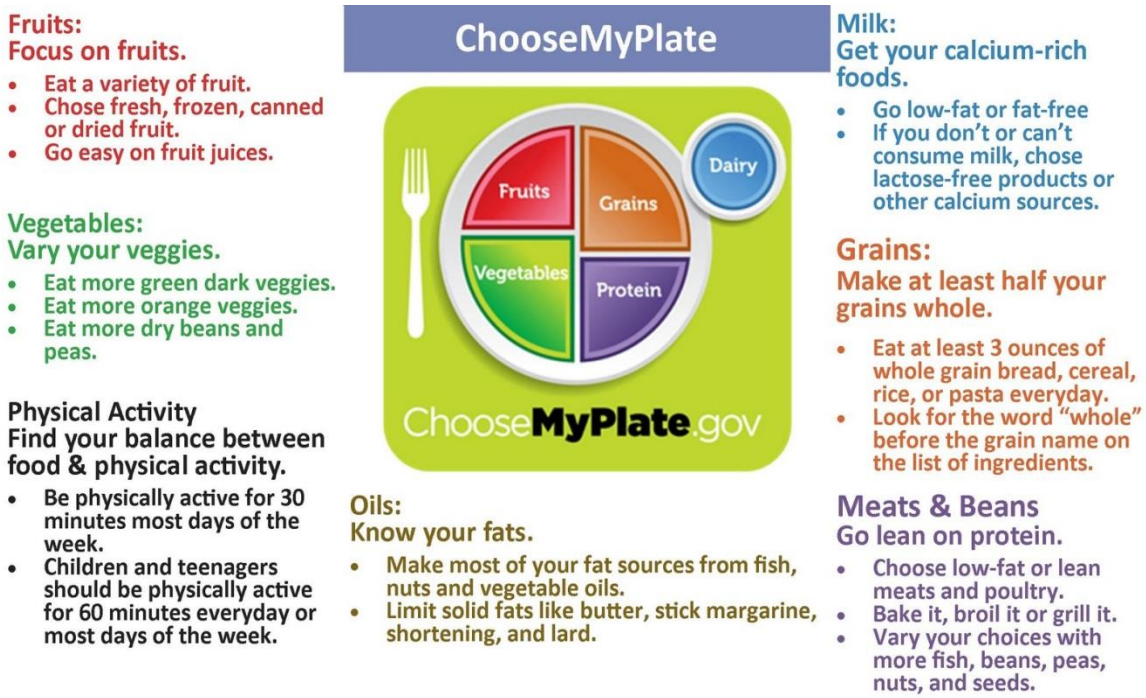

Figure 1.2 ChooseMyPlate Guide (2011)

One of the best way that preferred by people to have a healthy eating lifestyle is by taking organic foods. According to Magnusson *et al.* (2001), the major reason for consumer buying organic foods seem to be health related. According to Tregear *et al*. (1994), (cited by Magnusson *et al*. (2001)) most of the organic foods consumers who choose to purchase organic foods because of the high concern for their own and their family's health. Organic foods are proven to be safer because the production of organic foods is free from synthetic chemicals such as artificial pesticides and conventional fertilizers, and also without genetic modification (Miles and Frewer, 2001).

Knowing the benefits from consuming organic foods is important. Agribusiness nowadays is concern all about profits, but forgotten about health. The system of food production is about nutrition and health, not to mention taste. However, people nowadays are more to consume chemicals, toxins, GMOs, antibiotics, or drugs from foods. Therefore, it's better to consume organic foods (Group, 2014). Benefits of consuming organic foods can be categorized as: reduces risk of heart diseases, prevents cancer, reduces presence of pesticides, boosts immune system, ensures safe and healthy world for future generation, taste better than non-organic food, prevent premature aging, and promotes animal welfare (https://www.organicfacts.net/organic-products/organic-food/health-benefits-of-organic-food.html, Accessed October 14, 2015). However, one of the organic agriculture park's marketing manager Tan Wee Leong commented that awareness on the advantages and importance of consuming organic foods products was still lacking especially among locals in Malaysia (reported by Kili, 2014 in The Star Online).

Organic Association Malaysia (OAM), a non-profit organization, incorporated in Penang, Malaysia as Organic Alliance Malaysia Bhd, 16 October 2011. According to Mr. Ong Kung Wai, the Executive Director of Organic Alliance Malaysia, the aims and objectives are mainly about organic products, to educate, promote "organic" products, with the system cares about environment and social, on the methods of producing, processing and distributing. Besides, certification norms for organic products to be developed, implementation of the code of conduct in the marketing and trade of organic products are also their aims and objectives. Through events organized by OAM such as Penang Green Drink (April 22, 2013), by spreading the information of Earth Day, and the sharing of information on the interest on finding organic and healthy food as the top topics of conversation. In the long term, for the sustainable development, sustainable agriculture is needed, to build soil organic matter, it is more sustainable than present conventional agriculture. Organic agriculture offers safe quality food which in line with one of the key messages of Malaysian Dietary Guidelines of Key Message 13: Consume safe and clean foods and beverages.

Among the organic products introduced by OAM offers various types of products includes organic food products such as bakery products, beans and legumes, beverages and drinks, cereal and grain, condiment, herbs and spices, dairy products, dressing sauces, vinegars and mixes, jams and spreads, misc. dried, can and frozen food, noodles and pasta, oil, snacks and sweets, sweeteners etc. While for organic non-food products includes baby care products, baking aids, body care and cosmetics (Organic Alliance Malaysia, 2012).

1.2.5 Organic Products Certification

As a traditional way and the easiest way to recognize an organic product is by its label or certificate which is obtained through organic certification (Organic Guide Malaysia, 2012). Products that been classified as organic products with the organic label must fulfill standard requirements set by the government bodies or certification agencies. The enforcements of production standards include the flow of growing, processing, packaging and shipping. Each country may have its own organic certification standard, which means the products must be grown and manufactured in a manner that complies with the standards set by the countries they are sold in. Most certification bodies set a high standard to ensure that the quality of organic products is fulfilled. Organic products labeled with a special logo or label as certifications of being organic. Examples of the certification bodies are shown in Figure 1.3 in page 17 (Organic Guide Malaysia, 2012):

Figure 1.3 Examples of Organic Certification from various countries (Organic Guide Malaysia, 2012)

1.2.6 Examples of Organic Products

Nowadays, the organically produced goods, regardless of food or non-food have grown substantially.

Examples of organic food products are fresh vegetables, fruits, yoghurts, bakery products, beans and legumes, beverages and drinks, cereal and grain, dairy products, condiment, herbs and spices, poultry, fishes, vinegars and mixes, oil, dressing sauces, jams and spreads, can and frozen food, misc. dried, noodles and pasta, snacks and sweets, sweeteners etc.

Whereas for non-food includes personal care products, cosmetics, body care products, health care products, nutritional supplements, baby care products, baking aids.

Examples of organic food products available in the market:

Figure 1.4 Examples of organic food products available in market

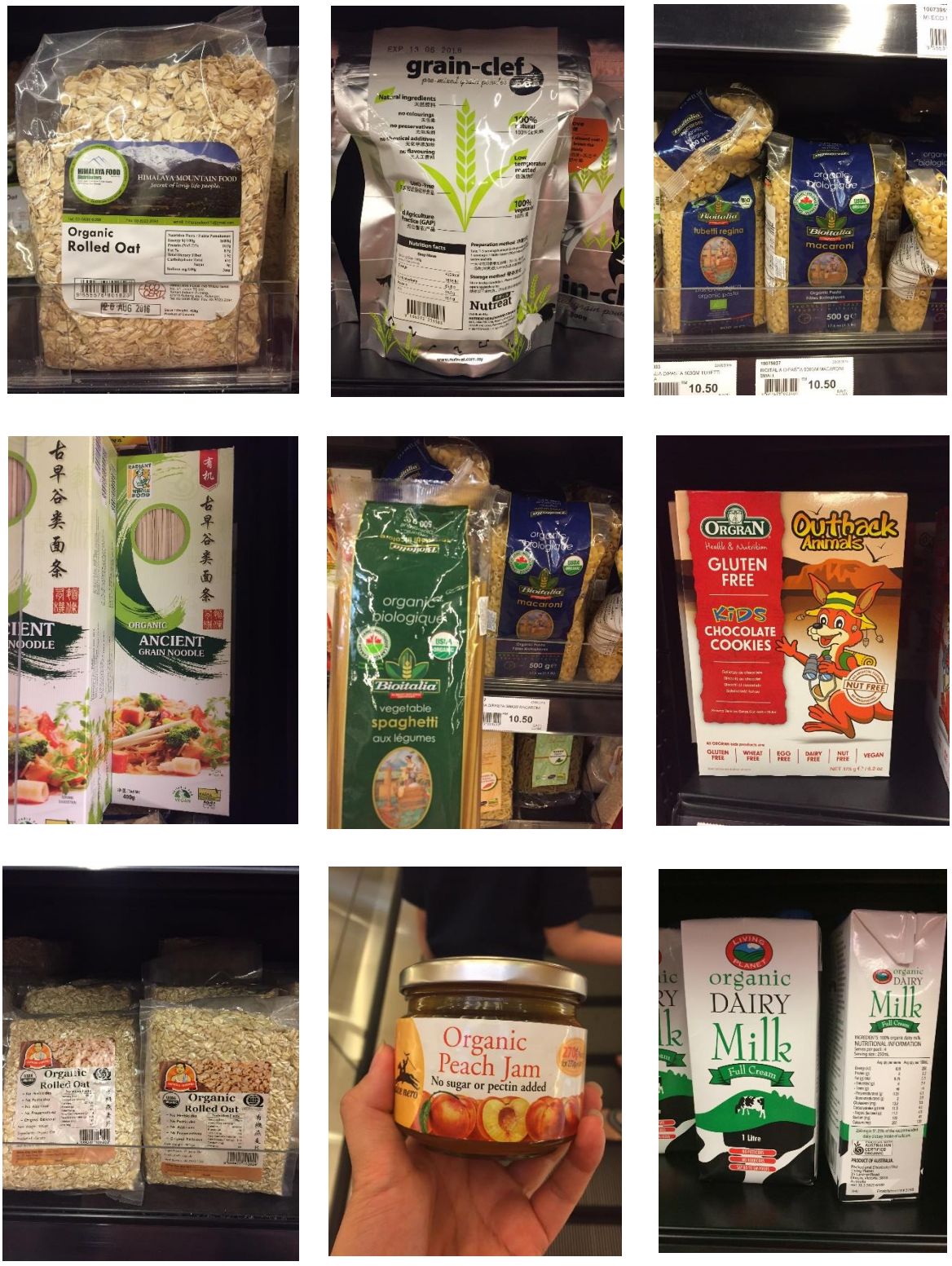

Figure 1.4 Examples of organic food products available in market

1.2.7 The Global Organic Industry

The Research Institute of Organic Agriculture (FiBL) and the International Federation of Organic Agriculture Movements (IFOAM) has written in the report year 2014 that healthy growth is occurring in all regions and continuing in the global market for organic products. The demand however is mainly in North America and Europe. The sales of organic products are projected to continue to rise in the coming years. The largest organic markets were in United States, Germany and France (Sahota, 2014).

According to the Organic Trade Association (2014) (cited in Stampler, 2014)., the global sales of organic food industry had grown to USD 35.1 billion in year 2013 and the Organic Trade Association is predicting 12% growth in year 2014. Organic products are skyrocketing in the United States, with the popularity of numbers of pros where generally grown free from the use of conventional fertilizers or synthetic pesticides or routine use of growth hormones or antibiotics towards crops are always heard and well known (Brandt, 2012). Between 1997 and 2011, customers' willingness to pay a premium towards organic food even though it could be twice as expensive as the conventionally grown counterparts, leads U.S. sales of organic foods increased from $3.6 billion to $24.4 billion (Brandt, 2012).

According to IFOAM (2014), the organic agricultural land is mostly used for cereals, including rice with 3.1 million hectares, followed by green fodder from arable land of 2.3 million hectares, oilseeds with 0.6 million hectares, protein crops with 0.3 million hectares, and vegetables with 0.2 million hectares. However, unfortunately there are also some countries with very large organic area but had little or no information on

the land use, such as Australia, Brazil, and India (Willer, 2014). Besides, there is also an amounting to 3.2 million hectares or approximately 7 percent of the organic cultural land for permanent crops such as coffee with almost 0.7 million hectares (almost one quarter of the organic permanent cropland), followed by olive with 0.6 million hectares, nuts and grapes with 0.3 million hectares each and cocoa with 0.21 million hectares (IFOAM, 2014).

The regions with the largest areas of organic agricultural land are Oceania with 12.2 million hectares, also equals to 32 percent of the world's organic agricultural land and followed by Europe with 11.2 million hectares or 30 percent, next by Latin America with 6.8 million hectares or 18 percent, then followed by Asia of 3.2 million hectares, 3 percent. The countries with the most organic agricultural land are Australia with 12 million hectares, Argentina with 3.6 million hectares and the United States with 2.2 million hectares. Focusing on Asia with a total organic agricultural land of 3.2 million hectares which constitutes 9 percent of the world's organic agricultural land in 2012, most of the producers with nearly 0.7 million were in India. The leading countries by area were China with 1.9 million hectares and India with 0.5 million hectares. Although Asian market for organic products in growing, however, most organic domestic product sales are from affluent countries while other Asian countries mainly have export-geared organic food sectors (Lernoud *et al*, 2014)(cited from FiBL and IFOAM, 2014). For Asian itself, the Development of organic agricultural land has increased from 0.06 million hectares in 2000 until 3.22 million hectares in 2012. The highest were in 20014 with 3.78 million hectares (FiBL-IFOAM-SOEL, 2014).

While for Malaysia itself, up to 2015, the total organic agricultural area was only 603 hectares and 119 producers (FiBL and IFOAM, 2015). Malaysia has been ranked at "not fully implemented" by the Common Objectives and Requirements of Organic Standards (COROS), up to 2014. Anyhow, the ASEAN Standard for Organic Agriculture (ASOA) is meandering its way to completion and it is likely to be served as a landmark and be an influential development for the region in the future (Ong, 2014). A surprising improvement yet challenging initiative for the organic sector in Malaysia came by way of encouragement and a support pledge from the Malaysian Convention and Exhibition Bureau to Organic Alliance Malaysia to make a bid for the IFOAM Organic World Congress in 2017. Anyhow, Malaysia has withdrawn the bid later (FiBL and IFOAM, 2015) and the congress will be held in India in 2017.

1.2.8 Organic Agriculture in Malaysia

Organic farming has become a growing importance industry in the agriculture sectors in various countries. Due to the awareness of public on hazardous effects of highly industrialized conventional agriculture which may harm the health of human beings, organic farming has been developed very well in most western countries such as USA, Canada, Japan and European Union (IFOAM, 2014). On the other hand, the development of organic farming brings advantages to farmers in increasing of productivity by protecting natural resources through proper use of technological systems and also able to get information and access to market easily. From time to time, countries are also searching for new methods as well in agriculture and organic farming (Rehber and Turhan, 2002).

Agriculture in Malaysia has been categorized as high levels of fertilizer with manure applications and consequently environmental pollution. Government started to promote organic farming and sustainable agriculture in Malaysia (Tiraieyari, Hamzah and Samah, 2014). Despite advantages that farmers and environments gain through organic farming, farmers in Malaysia still refused to adopt organic farming. Farmers are facing challenges on certification processes, land tenure, hiring foreign workers, marketing, training and extension services and lack of governmental support (Tiraieyari, Hamzah and Samah, 2014).

As organic farming doesn't use artificial pesticides and chemical fertilizers, thus lead to high labour requirement and hence lead to high cost of production. The organic products are normally sold at a higher price compared to normal products' price. In the context of efficient land use, the Department of Agriculture (DOA) is monitoring and conducting audit session for soil erosion losses on various soil types on different slope conditions (Ong, 2015). To better manage of sloping land, farmers, especially in highland areas are provided with special emphasis and courses on how to manage the soil. As compared to early years, the widely used of chemical fertilizers to supply plant nutrients and dealing with pest and diseases happened in Malaysia. Malaysia has relied heavily on conventional methods. Due to the rising of health awareness and environment issues, systematic program have been introduced to the utilization of resources on a sustainable basis including the recycling of waste products for food production and environment protection. The implementation of good agricultural practices, includes biological control chemicals, and to move towards healthier and natural way in the production of food (Ahmad, nd).

The Malaysian Organic Scheme (SOM) certificate was launched in 2003, aiming to focus on organic agriculture products in Malaysia. SOM is a standard that set out the requirements for organic agriculture in term of production processing and labeling. The standard of organic agriculture for production, processing, labeling and even marketing of the plant based organically food products is based on the Malaysian Standard MS 1529:2001 (Rozhan, 2015).

From January 2011, the logo of "SOM" (Skim Organik Malaysia) must be displayed on all locally produced organic vegetables and fruits to show the approval from government. Only approved and certified farms are allowed to display the logo on their locally produced fruits and vegetables (Stanton, Emms and Sia, 2011).

However, the Ministry of Agriculture of Malaysia has rebranded its SOM Standard to MyOrganic which aimed at encouraging more people to purchase and consume organic products in April 2015 (Sabri, 2015). Agriculture and Agro-based Industries former minister Datuk Seri Ismail Sabri Yaakob said there will be the involvement of the Veterinary and Fisheries Department in MyOrganic with the aim of placing organic products under one brand, comprising crops, livestock and aquaculture sub-sector. Also mentioned by the former minister during the launching of rebranding program, the growth demand for organic products is believed to be met with the launching of MyOrganic (Organic Monitor, 2015). MyOrganic mainly focuses on aspects of free from chemicals, protecting the environment and giving priority to safety of workers before the sector can be rated as organic. However the program has just started and has yet to be granted organic status certification. As at April 2015, the Agriculture Department of Malaysia has certified 136 farms under SOM, however, compared to